

REMARKS

In the office action dated October 17, 2005 the Examiner:

(1) rejected claims 10-16, 22, 28, 33-36, and 38-39 under 35 USC 102(b) as being anticipated by US 5,880,524 to Xie;

(2) rejected claims 14 and 38-42 under 35 USC 103(a) as being unpatentable over Xie in view of US 5,198,889 to Hisano;

(3) rejected claim 17 under 35 USC 103(a) as being unpatentable over Xie in view of US 5,097,387 to Griffith;

(4) rejected claims 21 and 37 under 35 USC 103(a) as being unpatentable over Xie in view of US 6,637,506 to Gektin; and

(5) rejected claim 43 under 35 USC 103(a) as being unpatentable over Xie in view of US 4,547,424 to Suzuki or US 6,329,603 to Japp.

35 USC 102

Applicants believe new claim 44, overcomes the prior art rejection under 35 USC 102(b) as being anticipated by Xie (US 5,880,524) in the following manner:

(1) Applicants claim "a peripheral sidewall of a lid, said peripheral sidewall integrally formed only with and around a periphery of a top wall of said lid," while in Xie FIG. 2, a portion of the sidewall is integral with top portion of lid 202 and a portion of the sidewall is integral with bottom portion 204 of the lid.

(2) Applicants claim "said lid including a separate bottom wall positioned inside and sealed to inside surfaces of said peripheral sidewall," while in Xie FIG. 2, the bottom wall is

integral to bottom portion 204 of the lid and the seal 206 is between the sidewall regions of upper and lower portions 202 and 204.

(3) Applicants claim "attaching said top surface of said peripheral lid support to only a bottom surface of a peripheral sidewall of a lid," while Xie in FIG. 2 teaches the lid support 218 is contacting the sidewall of the lid and the bottom wall 216 of the lid.

Applicants believe new claim 50, overcomes the prior art rejection under 35 USC 102(b) as being anticipated by Xie in the following manner:

Applicants claim "said first regions and said second regions having a same thickness," while Xie in FIG. 4, shows bottom wall 426 has regions of different thickness.

Applicants believe new claim 58, overcomes the prior art rejection under 35 USC 102(b) as being anticipated by Xie the following manner:

Applicants claim "a hyper ball grid array (HyperBGA) module" which Applicants maintain is not taught by Xie.

35 USC 103

Applicants respectfully believe the Examiners reason for combining Xie and Hisano (US 5,198,899), to wit "because it would have provided a cooling apparatus for cooling the semiconductor device as taught by Hisano" is an insufficient teaching of the need to combine references because the vapor chamber of Xie already provides cooling of the semiconductor devices without the need to use the teaching of Hisano.

Applicants believe new claim 51, overcomes the prior art rejection under 35 USC 103(a) as being unpatentable over Xie in view of Hisano in the following manner:

Applicants claim "said lid further including supports completely within said vapor chamber, each support having a vertical member extending between said top wall of said lid and said bottom wall of said lid, " while FIG. 12 of Hisano shows the support extending past seal 27 so it is not "between said top wall of said lid and said bottom wall of said lid" and "completely within said vapor chamber" as Applicants claim 51 requires.

Applicants believe new claim 52, overcomes the prior art rejection under 35 USC 103(a) as being unpatentable over Xie in view of Hisano in the following manner:

Applicants claim "said supports are integrally formed with said top wall of said lid," while in Hisano FIG. 12, the supports 23 are not integrally formed with the top wall 25 of the lid.

Applicants believe new claims 53 and 55, overcome the prior art rejection under 35 USC 103(a) as being unpatentable over Xie in view of Hisano in the following manner:

Applicants claim "said supports include through holes interconnecting said sub-chambers, while there appears to be no through holes taught in either Xie or Hisano.

Applicants believe new claim 54, overcomes the prior art rejection under 35 USC 103(a) as being unpatentable over Xie in view of Hisano in the following manner:

Applicants claim "said supports are integrally formed with said bottom wall of said lid," while in Hisano FIG. 12, the supports 23 are not integrally formed with the top wall 25 of said lid.

Applicants believe new claim 54, overcomes the prior art rejection under 35 USC 103(a) as being unpatentable over Xie in view of Hisano in the following manner:

Applicants claim "each bellows of said one or more bellows separate from said top and bottom wall and extending between an inner surface of said top wall and inner surface of said bottom wall within said vapor chamber," while Hisano in FIG. 29 shows the bellows 81a integral with the top wall 81 and defining the vapor chamber 60 rather than being inside the vapor chamber.

CONCLUSION

The Director is hereby authorized to charge and/or credit Deposit Account 09-0457.

Respectfully submitted,
FOR: Alcoe et al.

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